

What is claimed is:

1. A spline lubrication apparatus for lubricating a spline of a pump drive, said apparatus

5 comprising:

a housing;

a rotatable spline disposed within said housing, said spline including:

10 a shaft having a first and a second end and an external surface extending between said first and second ends, said external surface defining a plurality of longitudinally extending splines;

a gear rotatably supported within said housing, said gear including an internally splined bore for the
15 rotatable reception therein of said rotatable spline such that said rotatable spline extends through said bore with said plurality of splines intermeshing with said internally splined bore;

a bearing having a first and a second extremity, said bearing being disposed between said gear and said housing for bearingly supporting said gear for rotation within said housing; and

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a shield disposed adjacent to one of said extremities of said bearing for diverting a portion of a flow of lubricant flowing through said bearing so that said portion of said flow of lubricant flows through

said bore between said plurality of splines and said intermeshing internally splined bore for inhibiting fretting corrosion of said intermeshing splines and splined bore.

2. A spline lubrication apparatus as set forth in claim 1 wherein

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said housing includes:

a first part;

10 a second part removably cooperating with said first part such that said first and second parts together define an enclosure for the disposition therein of said spline, gear, bearing and shield.

3. A spline lubrication apparatus as set forth in claim 1 wherein

15 said spline is removably assembled within said internally splined bore.

4. A spline lubrication apparatus as set forth in claim 1 wherein

said gear includes:

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a rotatable sleeve which defines an annular collar which cooperates with said bearing.

5. A spline lubrication apparatus as set forth in claim 4 wherein

said sleeve defines said internally splined bore.

5 6. A spline lubrication apparatus as set forth in claim 4 wherein

said sleeve defines a further internally splined bore;

an insert of cylindrical configuration, said insert having a cylindrical surface which defines externally
10 extending splines which cooperate with said further internally splined bore of said sleeve, said insert
defining said internally splined bore which cooperates with said plurality of splines of said rotatable
spline;

7. A spline lubrication apparatus as set forth in claim 1 wherein

15 said bearing includes:

an inner ring;

20 an outer ring disposed concentrically relative to said inner ring;

a bearing race disposed between said rings.

8. A spline lubrication apparatus as set forth in claim 7 wherein

said bearing race includes:

5 a plurality of ball bearings.

9. A spline lubrication apparatus as set forth in claim 7 wherein

said bearing race includes:

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a plurality of tapered bearings.

10. A spline lubrication apparatus as set forth in claim 1 wherein

15 said gear and said bearing are self-contained within said housing.

11. A spline lubrication apparatus as set forth in claim 1 wherein

said shield is disposed within said flow of lubricant and downstream relative to said bearing.

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12. A spline lubrication apparatus as set forth in claim 1 wherein

said shield is disposed within said flow of lubricant and upstream relative to said bearing.

13. A spline lubrication apparatus as set forth in claim 1 wherein

5 said shield is of annular configuration.

14. A spline lubrication apparatus as set forth in claim 7 wherein

said shield is of annular configuration, said shield shielding said inner ring, said outer ring and said
10 bearing race so that said portion of said flow of lubricant is diverted through said bore between said
plurality of splines and said intermeshing internally splined bore for inhibiting fretting corrosion of
said intermeshing splines and splined bore.

15. A spline lubrication apparatus as set forth in claim 1 wherein

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said shield is of annular configuration having an inner and an outer rim;

said outer rim defining a ring which is divided into equidistantly spaced segments such that said ring
permits anchoring of said shield relative to said bearing.

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16. A spline lubrication apparatus for lubricating a spline of a pump drive, said apparatus
comprising:

a housing;

a rotatable spline disposed within said housing, said spline including:

5 a shaft having a first and a second end and an external surface extending between said first and second ends, said external surface defining a plurality of longitudinally extending splines;

a gear rotatably supported within said housing, said gear including an internally splined bore for the rotatable reception therein of said rotatable spline such that said rotatable spline extends through
10 said bore with said plurality of splines intermeshing with said internally splined bore;

a bearing having a first and a second extremity, said bearing being disposed between said gear and said housing for bearingly supporting said gear for rotation within said housing;

15 said housing including:

a first part; and

a second part removably cooperating with said first part such that said first and second parts together
20 define an enclosure for the disposition therein of said gear and bearing so that removal, inspection and replacement of said gear and bearing is permitted when said second part of said housing is moved relative to said first part.

17. A spline lubrication apparatus for lubricating a spline of a pump drive, said apparatus comprising:

a housing;

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a rotatable spline disposed within said housing, said spline including:

a shaft having a first and a second end and an external surface extending between said first and second ends, said external surface defining a plurality of longitudinally extending splines;

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a gear rotatably supported within said housing, said gear including an internally splined bore for the rotatable reception therein of said rotatable spline such that said rotatable spline extends through said bore with said plurality of splines intermeshing with said internally splined bore;

15 a bearing having a first and a second extremity, said bearing being disposed between said gear and said housing for bearingly supporting said gear for rotation within said housing;

a shield disposed adjacent to one of said extremities of said bearing for diverting a portion of a flow of lubricant flowing through said bearing so that said portion of said flow of lubricant flows through

20 said bore between said plurality of splines and said intermeshing internally splined bore for inhibiting fretting corrosion of said intermeshing splines and splined bore;

said housing including:

a first part; and

- 5 a second part removably cooperating with said first part such that said first and second parts together define an enclosure for the disposition therein of said gear, bearing and shield so that removal, inspection and replacement of said gear and bearing is permitted when said second part of said housing is moved relative to said first part.

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